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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,462	09/19/2006	**Guofang Wang**	2006_1421A	8924

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EXAMINER	
WILSON, MICHAEL H	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
10/27/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,462	WANG, GUOFANG	
	Examiner	Art Unit	
	MICHAEL WILSON	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20060919; 20061218*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is longer than 15 lines and more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 9, 11, 13, 15, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Cosimbescu et al. (US 2005/0089717 A1). Note Cosimbescu et al. claims priority to earlier filed US application No. 10/693,121 which fully supports the subject matter in the present rejection. Therefore the 102(e) date of the reference is 24 October, 2003.

Regarding claims 1-7, 9, 11, 13, 15, 17, and 19, Cosimbescu et al. disclose an electroluminescent device comprising an anode and a cathode [0084]. Between the electrodes is a hole transport layer, light-emitting layer, and an electron transport layer [0084]. The light-emitting layer comprises an asymmetric anthracene ([0017]-[0021]) of instant formula (1) wherein R1-R4 are hydrogen and R5-R11 are hydrogen, X is a biphenyl or triphenyl group of instant formulae (2-1), (2-2), (2-3), (2-4), or (2-8). The light-emitting layer also comprises a perylene derivative [0026], a borane derivative (compounds L50-L52, page 17), a coumarin derivative [0026], a pyran derivative [0026], an iridium complex (compound L45, page 16), or a platinum complex (compound L48, page 16) as a dopant [0082]. The reference discloses the electron transport layer comprising Alq, a quinolyl base metal complex [0165].

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 8, 10, 12, 14, 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cosimbescu et al. (US 2005/0089717 A1) in view of Thompson et al. (US 2002/0034656 A1).

Regarding claims 8, 10, 12, 14, 16, 18, and 20, Cosimbescu et al. disclose all the claim limitations as set forth above. Additionally the reference discloses a hole blocking layer may be used to improve the efficiency of the device [0147]. However the reference does not explicitly disclose a phenanthroline in the electron transport layer.

Thompson et al. discloses another electroluminescent device (abstract). The reference teaches BCP, a phenanthroline derivative, to be useful as a hole blocking layer which confines excitons in the luminescent layer [0030]. The reference also teaches BCP to function as both an hole blocking and electron transporting layer [0238].

It would be obvious to one of ordinary skill in the art at the time of the invention to add a layer of BCP to the electron transporting layer of Cosimbescu et al. as taught by Thompson et al. One of ordinary skill in the art would reasonably expect such a combination to be suitable given that Thompson et al. teach BCP to be hole blocking and electron transporting and Cosimbescu et al. teach a hole blocking layer to be

suitable for the device of Cosimbescu et al. One of ordinary skill in the art would be motivated by a desire to improve the efficiency of the device.

Miscellaneous

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ikeda et al. (WO 2004/018587 A1; the English equivalent is US 2006/0043858 A1) discloses asymmetric anthracene compounds as host for a light-emitting layer which meet instant formula (1), however the references are cumulative to the rejections of record.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL WILSON whose telephone number is (571) 270-3882. The examiner can normally be reached on Monday-Thursday, 7:30-5:00PM EST, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

MHW